

# ELECTRICAL PROTECTION

JUGS AUSTRALIA HIGHLY RECOMMENDS THE FOLLOWING DEVICE IS USED WITH YOUR BP2 BOWLING MACHINE.

## HPM D2PAB

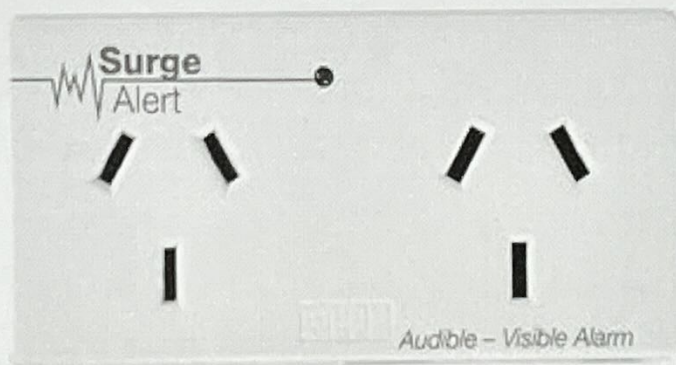
An electrical surge is a rapid, temporary increase in voltage – a common occurrence in power lines. These lightning-fast surges can destroy or damage the circuitry of sensitive electronic equipment.

Electrical surges can enter equipment and appliances through either a 240-volt power line or a telephone line (or both). Surge protection is vital because today's electronic equipment has become more compact. Electronics are smaller and denser, thus increasing their sensitivity.

The HPM Twin Surge Adaptor features an audible buzzer warning when protection is no longer available. Rated at 10A, this twin adaptor provides basic level surge protection and projects horizontally to the right side of the power point.

If you use an extension lead for your appliance, then you should plug the HPM Twin Surge Adaptor into the power lead – do not plug the power lead into the HPM Twin Surge Adaptor.

This device can absorb up to 150 Joules of surge energy. If it is overstressed, the neon light will go out and the audible buzzer will sound a warning alerting you that a large surge has been detected. In this case the unit must be replaced.



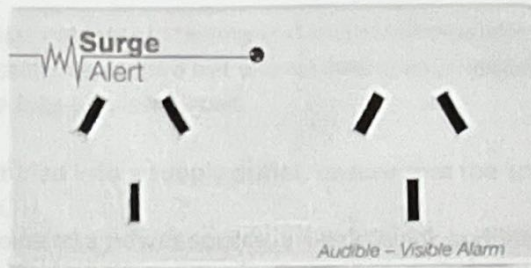
Available from Bunnings or most Electrical Wholesalers.

## BEFORE OPERATING

### ELECTRICAL PROTECTION

JUGS AUSTRALIA HIGHLY RECOMMENDS THE FOLLOWING SURGE ADAPTER OR SIMILAR DEVICE IS USED WITH YOUR BP2 BOWLING MACHINE.

**HPM D2PAB**



Available from Bunnings or most Electrical Wholesalers.

**Read all instructions and understand all warnings prior to using equipment.**

# Jugs Australia.

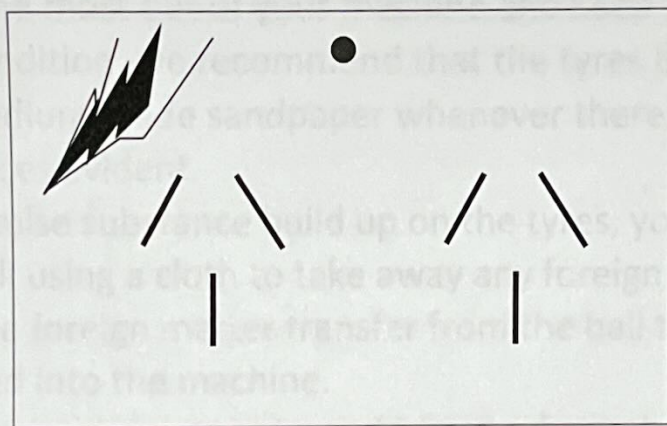
## Protecting your Jugs control circuit from damage.

Your Jugs BP2 Bowling Machine control circuitry is susceptible to surges and spikes very much the same as computer circuits.

Spikes are usually caused from electrical motor starting and industrial equipment control. It is recommended that the following steps be carried out when turning your machine on or off to reduce the chance of spikes damaging the Jugs Control Circuit.

1. Before plugging the power lead into a supply outlet, ensure that the speed dial on the control panel is in the **off** position.
2. After connecting the machine to a power source, a single quick audible beep will be heard from the BP2 controller indicating that power is connected; switch the machine on by rotating the speed dial clockwise to the desired speed indicated by the digital readout.
3. Allow time for the wheels to obtain the desired speed. Again, there will be an audible beep and the digital readout will flash once to indicate that the wheels have reached the set required speed. This will occur every time a change is made to the speed or delivery type.
4. When turning off machine, **firstly** turn down the dial to '**LOW**' leaving the dial in the on position. **Wait** for the wheels to **slow down** to minimum speed, **then** the dial may be rotated to the off position. Only after the dial on the control board has been positioned to off should the power lead be removed from the supply outlet.

It is recommended that a surge protection adapter (sample shown) be incorporated into the supply to maximise protection especially if the machine is to be used near an industrial area.



Please contact Jugs Australia if you have any questions regarding the use of your BP2 Jugs Bowling Machine.

NEVER Over-inflate THE TYRES and refer to your instruction manual often.

# Jugs Australia

Congratulations on your purchase of the Jugs BP2 Bowling Machine. To get the most out of your machine, we recommend you use the Jugs yellow dimple style balls and it is important to periodically carry out the following maintenance.

1. If you purchase and use the Jugs yellow dimple balls; when new, they are coated with a protection wax allowing you to purchase them in the best possible condition. It is important to lightly rub the wax away from the surface of each ball using a fine grade sandpaper of about 200grit prior to feeding the balls into the machine for the first time.
2. To get the most out of your machine and keep your tyres in peak condition, we recommend that the tyres be rubbed down with medium grade sandpaper whenever there is a build up of substances evident.
3. To minimise substance build up on the tyres, you should rub each ball using a cloth to take away any foreign material and minimise foreign matter transfer from the ball to the tyre when fed into the machine.
4. It is also very important to periodically check the tyres for the correct pressure. Running the machine on deflated tyres will wear the tyres out quickly.

***The correct tyre pressure is 26psi.***

NEVER OVER INFLATE THE TYRES and refer to your instruction manual often.

# JUGS Machines and GENERATORS

**The Yamaha (EF----is) series of inverter generators are the only generators available in Australia that Jugs recommends for use with their ball machines.**

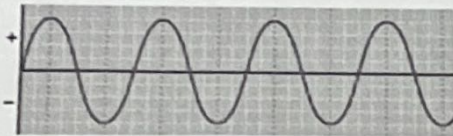
The Yamaha (EF----is) series generators use inverter technology and will deliver a sine wave with a distortion ratio of less than 2.5%. The voltage stability stays within a 1% range and the frequency stability is +/- 0.1%. This is a must these day's with electrical technology so advanced with equipment that relies on built-in computer functions and uses microcomputer controlled components such as projectors, power tools and Jugs Bowling Machines.

For more information, visit YAMAHA'S POWER PRODUCT WEBSITE at:

<https://www.yamaha-motor.com.au/products/power-products/generator/inverter>

A Wave Distortion Ratio of less than 2.5% is achieved with the Yamaha EF1000is model generator. This model can be used with equipment that requires stable frequency and voltage (as defined by an ideal "sine wave" when graphed), like products with built-in computer functions and microcomputer-controlled power tools or equipment like projectors.

EF----iS series-Inverter



---

**Your JUGS warranty will be void if damage results and it is found that the Jugs machine was powered by a generator other than a Yamaha inverter type generator.**

---

## IMPORTANT NOTE:

***Jugs does not receive commission or any form of benefits from Yamaha for recommending this product.***

***Jugs has concluded that this brand and type of generator is the only one available in Australia suitable to power their equipment after exhaustive tests and considerable cost to the company.***

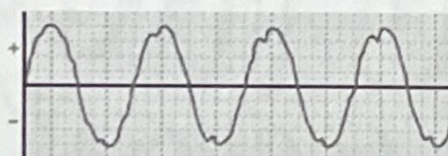
---

## THESE TYPE OF GENERATORS WILL DAMAGE THE JUGS CONTROLLER

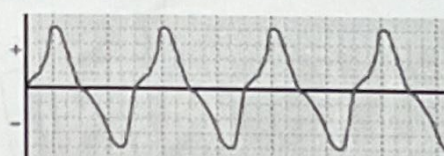
Some of the other type generators are the Cyclo-converter which is priced in the mid-range area and the AVR which is a very cheap generator.

These generators can put out voltages far in excess of 240 volts. At Jugs Australia we know that such voltages will inevitably cause damage to the Jugs control circuitry.

Cyclo-converter



AVR



\*Powerfactor-0.6 (Yamaha statistics)